STATEMENT OF BASIS

as required by LAC 33:IX.3109, for draft **Louisiana Pollutant Discharge Elimination System Permit No. LA0118966; AI 111355; PER20100001** to discharge to waters of the **State of Louisiana** as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

I. THE APPLICANT IS:

H2O Systems, Inc
Penn Mill Lakes STF
845 Galvez Street
Mandeville, LA 70448

II. PREPARED BY: Rachel Davis

DATE PREPARED: November 23, 2010

III. PERMIT ACTION: reissue LPDES permit LA0118966, AI 111355; PER20100001

LPDES application received: March 23, 2009

EPA has not retained enforcement authority.

LPDES permit issued: July 1, 2004
LPDES permit expired: June 30, 2009

On March 22, 2010, the 19th Judicial District Court ordered that the decision of the Lousiana Department of Environmental Quality to issue a water discharge permit, effective on November 1, 2009, authorizing H2O Systems, Inc. to discharge treated sanitary wastewater from the Penn Mill Lakes Sewage Treatment plant to be vacated. The permit is being reissued with additonal information pertaining to the discharge route and the impact that this discharge will have on the receivinig stream. (See language in Section IX. Outstanding Natural Resource Water and Section XII. Additional Information. Environmental Impact Questionnaire.)

IV. FACILITY INFORMATION:

A. The application is for the discharge of treated sanitary wastewater from a privately owned treatment works serving the Penn Mill Lakes Subdivision.

B. The permit application does not indicate the receipt of industrial wastewater.

C. The facility is located on Penn Mill Lakes Blvd approx 0.25 miles from intersection with Penn Mill Loop in Covington, St. Tammany Parish.

D. The treatment facility consists of an extended aeration sewage treatment plant with chlorine disinfection.

E. Outfall 001
Discharge Location: Latitude 30° 31' 30" North
Longitude 90° 9' 20" West

Description: treated sanitary wastewater

Expected Flow: 474 homes x 400 gallons/day/home = 0.19 MGD

Calculations for gallons per day were based upon figures obtained from Chapter 15 of the State of Louisiana Sanitary Code, Department of Health and Hospitals, Office of Public Health.

Type of Flow Measurement which the facility is currently using:
Continuous Recorder

V. RECEIVING WATERS:

The discharge is into a parish drainage ditch, thence into Horse Branch, thence into the Tchefuncte River in segment 040801 of the Lake Pontchartrain Basin. This segment is listed on the 303(d) list of impaired waterbodies.

The designated uses and degree of support for Segment 040801 of the Lake Pontchartrain Basin are as indicated in the table below[1/]:

Degree of Support of Each Use						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
Not Supported	Full	Not Supported	Full	N/A	N/A	N/A

[1/]The designated uses and degree of support for Segment 040801 of the Lake Pontchartrain Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 040801 of the Lake Ponchartrain Basin, has been identified by the U.S. Fish and Wildlife Service (FWLS) as habitat for the Gulf sturgeon, which is listed federally as a threatened species. However, this type of discharge is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the 'Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits' no consultation with the Louisiana State Historic Preservation Officer is required.

VIII. PUBLIC NOTICE:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

For additional information, contact:

Ms. Rachel Davis
Water Permits Division
Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

IX. PROPOSED PERMIT LIMITS:

Final Effluent Limits:

Subsegment 040801, Tchefuncte River and Tributaries, is listed on LDEQ's Final 2006 303(d) List as impaired for pathogen indicators and mercury. To date no TMDLs have been completed for this waterbody. A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by a TMDL. Until completion of TMDLs for the Lake Pontchatrain Basin, those suspected causes for impairment which are not directly attributed to the sanitary wastewater point source category have been eliminated in the formulation of effluent limitations and other requirements of this permit. Additionally, suspected causes of impairment which could be attributed to pollutants which were not determined to be discharged at a level which would cause, have the reasonable potential to cause or contribute to an excursion above any present state water quality standard were also eliminated.

Mercury

Since this facility only serves a residential subdivision and no commercial or industrial type facilities are discharging to this facility, the department believes there is little potential for a discharge of mercury from this facility. Therefore, no limitations for mercury will be required of this facility..

Pathogen Indicators

To protect against high levels of pathogenic organisms in the receiving waterbody, fecal coliform limits have been established in the general permit.

Outstanding Natural Resource Water

Tchefuncte River, Subsegment 040801, is a designated Outstanding Natural Resource Waterbody. As described in Section XII. Additional Information of this statement of basis, alternative discharge types and locations were considered. The discharge at this location was determined the most appropriate. Also, a statistical model was run using BOD_5 samples submitted by the facility (See EDMS Doc # 7742813) and it was determined that Penn Mill Lakes Subdivision will not cause degradation of the receiving stream (See Appendix A). BOD_5 data was selected to be used in the statistical model because this parameter is a good indicator to illustrate potential degradation from sanitary wastewater within a receiving stream.

OUTFALL 001

Final limits shall become effective on the effective date of the permit and expire on the expiration date of the permit.

Effluent Characteristic	Monthly Avg (lbs./day)	Monthly Avg	Daily Max	Basis
$CBOD_5$	16	10 mg/l	15 mg/l	Limits set in accordance with the Areawide Policy for St. Tammany Parish and the previous permit
TSS	24	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgement for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen	8	5 mg/l	10 mg/l	Limits set in accordance with the Areawide Policy for St. Tammany Parish and the previous permit
Dissolved Oxygen*	---	5 mg/l	N/A	Limits set in accordance with the Areawide Policy for St. Tammany Parish and the previous permit

*This Dissolved Oxygen limit is the lowest allowable average of daily discharges over a calendar month. When monitoring is conducted, the Dissolved Oxygen shall be analyzed immediately, as per 40 CFR 136.3.

Other Effluent Limitations:

1) Fecal Coliform

The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5., the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Daily Maximum) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgement in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

2) pH

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time. (Limits as established through BPJ considering BCT for similar waste streams in accordance with LAC 33:IX.5905.C)

3) Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

X. PREVIOUS PERMITS:

LPDES Permit No. LA0118966: Issued: July 1, 2004
Expired: June 30, 2009

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Monthly Avg.	Weekly Avg.	Measurement Frequency	Sample Type
Flow	Report	Report	Continuous	Recorder
$CBOD_5$	10 mg/l	15 mg/l	2/month	Grab
TSS	15 mg/l	23 mg/l	2/month	Grab
Ammonia-Nitrogen	5 mg/l	10 mg/l	2/month	Grab
Dissolved Oxygen	5 mg/l	---	2/month	Grab
Fecal Coliform Colonies	200	400	2/month	Grab

XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:

A) Inspections

A review of the files indicates the following inspections were performed during the period beginning **Jaunary 2007** and ending **May 2010** for this facility.

Facility Inspection, April 23, 2010, EDMS Document No. 47430520

1. Solids were observed in the receiving ditch on the east and west sides of Horse Branch Road and in the culvert on the east side of Horse Branch Rd.
2. Danette Jenkins with H2O Systems stated that the lift station over pumped into the plant and Glyteck had been to the area to vacuum the ditch on 4/7/10, 4/12/10 and 4/13/10.
3. The facility manager stated that the ditch had not been cleaned enough by Glyteck and would call them to vacuum the ditch again.
4. Floating solids were observed in the receiving ditch near the final effluent pipe.
5. Algae build up and solids observed in the weirs.
6. Post Aeration appeared cloudy at the time of inspection.

Facility Inspection, November 17, 2009, EDMS Document No. 45934396

1. The inspection was conducted in response to Incident # 119390.
2. At the time of inspection, floating solids, scum, and bubbles were observed in the receiving ditch for Penn Mill Lakes Subdivision.
3. The receiving ditch, at the discharge pipe contained floating and settable solids.
4. A tour of the STP revealed solids and debris in the weirs, pin flock in the clarifiers and floating solids were observed in the final effluent chamber.
5. The tertiary treatment for the plant has been offline for approximately three weeks due to a burned up motor.
6. The operator stated that Glytech was notified to vacuum the solids from the ditch.

Facility Inspection, May 30, 2008, EDMS Document No. 37348208.

1. Plant received a large amount of mud, clay, and silt from area under development.
2. Tertiary filter was not functioning.
3. A recorder is being used, but no flow charts are being used as required by permit.
4. NH_3N, CBOD, and TSS loadings aren't calculated by using actual 24 hr flows.
5. DO and pH meter logs were not available.

B) Enforcement Actions

A review of the files indicates that no recent enforcement actions have been administered against this facility. Based on an inspection performed on April 23, 2010, LDEQ surveillance division referred the facility to enforcement on May 24, 2010.

C) DMR Review

A review of the discharge monitoring reports for the period beginning **January 2007** through **March 2010** has revealed the following violations:

Parameter	Outfall	Period of Excursion	Permit Limit	Reported Quantity
Fecal	001	December 2008	400	552
Fecal	001	December 2009	400	920

D) Company Compliance History

There are no open enforcement actions for H2O systems, Inc for the permits listed in the application.

Please be aware that the Department has the authority to reduce monitoring frequencies when a permittee demonstrates two or more consecutive years of permit compliance. Monitoring frequencies established in LPDES permits are based on a number of factors, including but not limited to, the size of the discharge, the type of wastewater being discharged, the specific operations at the facility, past compliance history, similar facilities and best professional judgment of the reviewer. We encourage and invite each permittee to institute positive measures to ensure continued compliance with the LPDES permit, thereby qualifying for reduced monitoring frequencies upon permit reissuance. As a reminder, the Department will also consider an increase in monitoring frequency upon permit reissuance when the permittee demonstrates continued non-compliance.

XII. ADDITIONAL INFORMATION:

ENVIRONMENTAL IMPACT QUESTIONNAIRE

The agency requested that H2O Systems submit answers to the Environmental Impact Questionnaire because of the discharge route of the facility. The document was received on May 18, 2010 (EDMS Doc ID# 47450454). The responses have been reviewed by the agency and have been determined to fulfill the environmental assessment requirement. The answers to those questions are summarized below.

1. Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

   The installation of the facility greatly improved the real effects of the 474 lot development. If not for this central sewage treatment facility the land could have been developed with individual septic tanks at each home, with no effective effluent limits, nor any regulated monitoring and testing. Proper operation and maintenance of the facility in accordance with the LPDES permit should protect human health and avoid any potential adverse environmental effects

2. Does a cost benefit analysis of the environmental-impact cost balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

   The facility is protected by a fence, nuisance odors are minimized through appropriate design and operation, facility operations do not impact air quality, soil or groundwater, therefore minimizing negative impacts that the facility might have on the environment.

   The primary social benefit derived from the facility is the means it affords the residents of Penn Mill Lakes Subdivision to dispose of their domestic waste because they have no other municipal or community sewage treatment option available and they would otherwise have to individually dispose of such wastes via individual septic tanks at each home with no type of regulation required.

   Economically this facility would reduce regulatory enforcement costs with only one plant being monitored rather than 474 individual plants. It also reduces the burden on individual homeowners who would otherwise have to install and maintain individual systems.

3. Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing nonenvironmental benefits?

   While there are no other community or regional wastewater treatment facilities capable of serving Penn Mill Lakes, there are alternative processes available. Most of them include a bar screen, activated sludge process treatment system, clarifier and/or filtration system, disinfection units, post aeration equipment and aeration pond. Economically and financially these are not feasible for the facility to utilize because it is an existing facility.

   The facility has no access to divert the discharge into treatment methods such as wetlands, overland flow or retention ponds. The developers chose this land because of the low amount of wetlands to minimize the impact on the wetlands. There are no wetlands large enough near the facility to handle the discharge from Penn Mill Lakes Subdivision. The retention ponds ("Penn Mill Lakes") located within the subdivision were not considered as an alternative because H2O Systems does not have authority to discharge into these privately-owned ponds. Also, H2O Systems did not believe that allowing the treated

wastewater to flow through the existing stagnant retention ponds would improve the quality of the water, in fact by the time it flowed through these ponds the effluent would actually be degraded. Therefore, discharging directly from the plant was considered the best option.

4. Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing nonenvironmental benefits?

   This is an existing facility with no other community or regional wastewater treatment facilities in the area capable of handling the Penn Mill Lakes Subdivision. There are also no practical means available to transfer the effluent from the existing facility out of the existing drainage basin.

5 Are there mitigating measures which would offer more protection to the environmental than the facility as proposed without unduly curtailing nonenvironmental benefits?

   Other treatment options were considered but no other viable techniques were as effective as the current system being used at the facility. The existing facility also lessens the effect that individual septic tanks that residents would have to use if it were not for the central facility. Public exposure to inadequately treated or untreated sewage is eliminated in the user area and sanitation is improved.

Reopener Clause

The Louisiana Department of Environmental Quality (LDEQ) reserves the right modify or revoke and reissue this permit based upon any changes to established TMDL's for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as requested by the permittee and/or as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

This permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(C) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act or more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDL's, if the effluent standard, limitations, water quality studies or TMDL's so issued or approved:

a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

b) Controls any pollutant not limited in the permit; or

c) Requires reassessment due to change in 303(d) status of waterbody; or

d) Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

Mass Loading Calculations

Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the design capacity of 0.19 MGD.

Effluent loadings are calculated using the following example:

BOD: 8.34 lb/gal x 0.19 MGD x 10 mg/l = 16 lb/day

Monitoring Frequency Requirements

At present, the **Monitoring Requirements, Sample Types, and Frequency of Sampling** as shown in the permit are standard for facilities of flows between **0.1** and **0.5** MGD.

Effluent Characteristics	Monitoring Requirements	
	Measurement Frequency	Sample Type
Flow	Continuous	Recorder
$CBOD_5$	2/month	Grab
Total Suspended Solids	2/month	Grab
Ammonia-Nitrogen	2/month	Grab
Dissolved Oxygen	2/month	Grab
Fecal Coliform Bacteria	2/month	Grab
pH	2/month	Grab

XIII. TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Statement of Basis.

XIV. REFERENCES:

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2009.

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2009.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program," Louisiana Department of Environmental Quality, 2009.

Low-Flow Characteristics of Louisiana Streams, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

LPDES Permit Application to Discharge Wastewater, H2O Systems, Inc, Penn Mill Lakes STF, March 23, 2009.